



2017 THERAPY SUBJECT INDEX

Covering 2013–2016

This subject index for the Raphex Therapy Examination booklets is arranged by year and question number (T1–T140).

I. ATOMIC AND NUCLEAR STRUCTURE (+ DECAY AND RADIOACTIVITY)

A. The Atom

2013 T1, T6, T7, T9
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2015 –
2016 T3

B. Radioactivity and Decay

2013 T2, T3, T4, T5, T8
2014 T2, T2, T3, T4, T5
2015 T1, T2, T3, T4, T5
2016 T1, T2, T4, T5, T6, T7

2. PRODUCTION OF X-RAYS, PHOTONS, AND ELECTRONS

A. Basic Physics of X-ray Beam Production

2013 T10, T11, T12
2014 T7, T8, T9, T10, T11
2015 T7, T9
2016 T8, T9, T10, T11

B. Generation of Beams

2013 –
2014 –
2015 T8, T10
2016 –

3. TREATMENT MACHINES AND GENERATORS; SIMULATORS (+ CT)

A. Linacs

2013 T14, T16, T18, T19, T20, T21
2014 T12, T13, T14, T15, T17, T18
2015 T11, T12, T14, T15, T16, T17, T19
2016 T12, T15

B. Linac Collimation Systems and Other Teletherapy

2013 –
2014 T16
2015 T34
2016 T13, T16, T17

C. Simulators

2013 T15, T17, T22, T23
2014 –
2015 –
2016 –

4. RADIATION INTERACTIONS

A. Interactions of X-rays and Gamma Rays with Matter

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2014 T19, T20, T21, T22, T24, T26, T27, T52
2015 T22, T23, T25, T27
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B. Attenuation of Photon Beams

2013 T26, T27, T28, T29, T30, T31
2014 T23
2015 T20, T21, T26
2016 T24, T25, T26

C. Interactions of Particulate Radiation

2013 –
2014 T25
2015 –
2016 –

5. RADIATION BEAM QUALITY AND DOSE

A. Monoenergetic and Polyenergetic Bremsstrahlung Beams

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2014 T30
2015 T30, T31
2016 T31

B. Dose Quantities and Units

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2014 T28, T29, T31
2015 –
2016 T28, T29

C. Relationships of Kerma, Dose, and Exposure

2013 –
2014 T32
2015 T29, T32
2016 T30

6. RADIATION MEASUREMENT AND CALIBRATION

A. Calculation of Dose

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2014 –
2015 T13
2016 –

B. Dose Output Calibration

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2014 T33, T35, T36, T37, T38
2015 T68
2016 T27, T37, T39

C. Clinical Dosimetry

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2014 T39, T40, T41
2015 T33, T35, T36, T37, T38, T39
2016 T32, T35, T36, T38

7. PHOTONS AND X-RAYS (+ CONCEPTS, ISODOSES, MU, HETEROGENEITIES, FIELD SHAPING, COMPENSATION, FIELD MATCHING, ETC.)

A. External Beam Dosimetry Concepts (Pt. I)

2013 –
2014 T42, T44, T45, T54
2015 T24, T40
2016 T14, T40, T42

B. External Beam Dosimetry Concepts (Pt. II)

2013 T47
2014 T46, T51
2015 T41
2016 T33

C. System of Dose Calculations

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2014 T43, T47, T48, T53, T55, T56, T59
2015 T42, T47, T48, T51, T54, T56
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D. Translation of Computerized Planning

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2014 –
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E. Computerized Treatment Planning

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2015 T44, T55, T58
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F. Surface Corrections and Heterogeneity Calculations

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G. Adjoining Fields and Special Dosimetry Problems

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8. ELECTRON BEAM CHARACTERISTICS AND PLANNING

A. Basic Characteristics

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2015 T63
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B. Treatment Planning with Electrons

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2015 T59, T60, T61, T62, T63, T64
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9. EXTERNAL BEAM QUALITY ASSURANCE

A. Overview of QA in RT

2013 T37, T43
2014 T71, T99
2015 –
2016 –

B. Linac and Imaging QA

2013 T69, T70, T71
2014 T68, T69, T70, T72
2015 T65, T67
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10. INFORMATICS (DICOM, NETWORKING, PACS, DATA MANAGEMENT)

2013 T72, T73, T74
2014 T73, T74
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11. RADIATION PROTECTION AND SHIELDING

A. Radiation Safety

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2015 T28, T72, T74, T81
2016 T71, T74, T75

B. Radiation Shielding

2013 T76, T79, T82, T83
2014 T75
2015 T73, T75, T76
2016 T72, T73, T76, T77

12. IMAGING FOR RADIATION ONCOLOGY

A. Radiography Fundamentals

2013 T86, T89, T90, T91
2014 T88
2015 –
2016 T34, T80

B. CT and PET

2013 T88, T92, T96, T97
2014 T83, T84, T86, T89, T90
2015 T77, T86
2016 T78, T81, T83

C. MRI and Ultrasound (MRI Scanning)

2013 –
2014 T85
2015 T80, T83, T85
2016 T86

D. Use of Imaging in Treatment Planning

2013 –
2014 T87, T101
2015 T82, T84, T95
2016 T85, T112

13. 3D-CRT (INCLUDING ICRU CONCEPTS AND BEAM-RELATED BIOLOGY)

A. 3D-CRT Concepts; Volumetric vs. Non-volumetric

2013 –
2014 T96, T97
2015 T88, T89
2016 T84, T87, T90, T91, T113

B. Volumetric Beam Placement

2013 –
2014 –
2015 T90
2016 T89, T92, T93

C. Treatment Planning Methods

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2014 T91, T93, T94, T95, T98
2015 T91, T92, T93, T94
2016 T82

14. ASSESSMENT OF PATIENT SETUP AND TREATMENT (+ EPID, IMMOBILIZATION, ETC.)

A. Positioning and Immobilization Methods and Devices

2013 T87, T93, T94, T95, T102, T103, T104, T105, T106
2014 T92, T103
2015 T52, T99
2016 T94, T95, T96, T98

B. Treatment Verification

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2014 T100, T102
2015 T96, T97, T98
2016 T97

15. IMRT

A. IMRT Delivery Systems

2013 T107, T108, T109, T111, T112, T113
2014 T104, T105, T108, T109, T111
2015 T102, T103
2016 T99, T101, T107

B. Dose Prescription and Inverse Planning

2013 T110
2014 T106, T107, T110
2015 T100, T101, T105, T107
2016 T100, T102, T103

C. IMRT QA

2013 –
2014 –
2015 T104, T106
2016 T104, T105, T106

16. SPECIAL PROCEDURES (+ RADIOSURGERY, TBI, ETC.)

A. Delivery and Positioning

2013 T115, T118, T119, T120
2014 –
2015 T18, T108, T110, T112, T113, T115
2016 –

B. SRS Dose Prescription and Planning, QA

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2014 T115, T116, T117, T118
2015 T66, T69, T111, T119
2016 T111, T114

C. Other Special Procedures

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2014 T112, T113, T114
2015 T109, T114
2016 T108, T109, T110, T115

17. BRACHYTHERAPY (+ INTRACAVITARY, INTERSTITIAL, HDR, ETC.)

A. Radioactive Sources (General Information) and Calibration

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2014 T119, T120, T121, T125, T127, T131, T132
2015 T6, T122, T128, T130
2016 T118, T129, T130

B. Calculations of Dose Distributions

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C. Implantation Techniques

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2014 –
2015 T120, T126, T129
2016 T118, T117, T123, T126, T128

D. Gynecological Implants/Insertions

2013 T131
2014 –
2015 –
2016 T121

E. Systems of Implant Dosimetry

2013 T125, T132
2014 T124, T128, T129
2015 –
2016 –

F. QA and Safety

2013 T127, T128, T133, T135
2014 T126
2015 T116, T117, T118, T121, T123, T125, T131
2016 T120, T122, T127

18. RADIOPHARMACEUTICAL PHYSICS AND DOSIMETRY

A. Methods of Production and Clinical Treatments

2013 T137
2014 –
2015 T132, T133
2016 –

B. Internal Dosimetry and Safety

2013 T136
2014 –
2015 –
2016 T131, T132, T133

19. HYPERTHERMIA

A. Physics Aspects of Hyperthermia

2013 –
2014 –
2015 –
2016 –

B. External Superficial Electromagnetic Hyperthermia Applicators

2013 –
2014 –
2015 –
2016 –

C. Interstitial Electromagnetic Hyperthermia Applicators

2013 –
2014 –
2015 –
2016 –

D. Ultrasound Hyperthermia Systems

2013 –
2014 –
2015 –
2016 –

20. PARTICLE THERAPY

A. Cyclotrons and Synchrotrons

2013 –
2014 T135
2015 –
2016 –

B. Protons

2013 T138, T139, T140
2014 T66, T134, T136, T137, T139, T140
2015 T134, T135, T136, T137, T138
2016 T23, T134, T135, T136, T138

C. Neutrons

2013 –
2014 T138
2015 –
2016 –

D. Safety and Shielding for Protons and Neutrons

2013 –
2014 –
2015 –
2016 –

21. RADIATION INCIDENTS AND BIOTERRORISM RESPONSE TRAINING

2013 –
2014 –
2015 T139, T140
2016 T139, T140